

Applic. No.: 10/022,610

Amdt. Dated August 23, 2005

Reply to Office action of May 23, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

Claim 1 (currently amended). A method for transmitting data from a first router device, connected to a communications network through a network gateway unit, through the communications network to a second router device, which comprises:

providing a hardware address according to a routing protocol, the hardware address being used to identify [[a]] the second router device located downstream with respect to a data path leading to a transmission destination of the data;

allocating the hardware address to the data to be transmitted with the first router device dependent upon the transmission destination of the data;

transmitting the hardware address and the data from the first router device to the network gateway unit;

checking, with the network gateway unit, whether or not the transmitted hardware address matches a hardware address stored

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in a memory of the network gateway unit and, in the event of a positive check result:

allocating a network address to the data with the network gateway unit, the network address being allocated to the transmitted hardware address in the network gateway unit and identifying an exit point of the communications network;

forwarding the network address and the data from the network gateway unit into the communications network after conversion according to a transmission protocol used in the communications network; and

transmitting the data from the communications network to the exit point defined by the network address, the exit point being where the data is fed to the second router device.

Claim 2 (cancelled).

Claim 3 (currently amended). The method according to claim 1, which further comprises:

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connecting the second router device through a second network gateway unit serving as the exit point to the communications network;

allocating the hardware address identifying the second router device to the data with the second network gateway unit; and

transmitting the data from the second network gateway unit to the second router device.

Claim 4 (original). The method according to claim 1, which further comprises

connecting the second router device to the communications network as the exit point identified by the network address; and

receiving the data from the communications network with the second router device.

Claim 5 (original). The method according to claim 1, which further comprises:

connecting a first local area network to the first router device;

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connecting a second local area network to second router device; and

transmitting the data:

from the first local area network through the first router device to the second router device; and

from the second router device into the second local area network.

Claim 6 (original). The method according to claim 1, which further comprises:

storing, in an allocation table, hardware addresses identifying router devices, the hardware addresses being respectively allocated to one of network addresses; and

allocating the network address to the transmitted hardware address in the network gateway unit using the allocation table.

Claim 7 (original). The method according to claim 6, which further comprises storing an IP address of a router device

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identified by the respective one of the hardware addresses in the allocation table, the respective one of the hardware addresses being allocated to a hardware address stored in the allocation table and provided for identification of the router device.

Claim 8 (original). The method according to claim 7, which further comprises:

answering, with the network gateway unit, an inquiry of the first router device relating to a hardware address of a router device identified by an IP address contained in the inquiry; and

transmitting the hardware address allocated to the relevant IP address in the allocation table from the network gateway unit to the first router device.

Claim 9 (original). The method according to claim 1, wherein the hardware address is a medium access control address.

Claim 10 (original). The method according to claim 1, which further comprises transmitting the data in the communications network through preexisting connections.

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Claim 11 (original). The method according to claim 1, which further comprises transmitting the data in the communications network through connections set up on demand.

Claim 12 (currently amended). ~~In a communications system having router devices, a first of the router devices being connected to a communications network through a~~ A network gateway unit for connecting a first one of router devices with a communications network, the communications network utilizing a transmission protocol, the network gateway unit transmitting data from ~~[[a]]~~ the first router device through the communications network to another one of the router devices, the network gateway unit comprising:

an allocation table for storing hardware addresses each respectively allocated to a network address and identifying an exit point of the communications network to a relevant one of the router devices, the first router device using the hardware addresses to identify another one of the router devices;

an address-checking device determining if a hardware address arriving from the first router device matches one of the hardware addresses in said allocation table, said address-checking device connected to said allocation table;

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an address allocation device allocating data arriving from the first router device, the data being allocated to a respective one of the hardware addresses, to a network address allocated to the respective one of the hardware addresses in said allocation table, said address allocation device connected to said allocation table; and

a protocol conversion device converting and transmitting the data arriving from the first router device according to the transmission protocol, the network address allocated to the data being used as address information, said protocol conversion device connected to said address-checking device and to said address allocation device.

Claim 13 (original). The network gateway unit according to claim 12, wherein:

each of the router devices has an IP address; and

an IP address of one of the router devices identified by a relevant hardware address is allocated in said allocation table to one of the hardware addresses recorded in said allocation table.

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Claim 14 (original). The network gateway unit according to claim 13, wherein:

the first router device sends inquiries including a given IP address, the inquiries each relating to a hardware address of one of the router devices identified by the given IP address, and

an address resolution device:

answers the inquiries from the first router device by searching for the respective one of the hardware addresses allocated to the given IP address in said allocation table; and

transmits the respective one of the hardware addresses to the first router device.

Claim 15 (original). The network gateway unit according to claim 12, including an entry device for entering address information into said allocation table, said entry device connected to said allocation table.

Claim 16 (original). The network gateway unit according to claim 12, including a means for entering address information

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into said allocation table, said entry means connected to said allocation table.

Claim 17 (original). The network gateway unit according to claim 12, wherein the communications network is an asynchronous transfer mode network.